



FACTORS AFFECTING THE ADOPTION OF ROTAVETOR TECHNOLOGY FOR WHEAT AND PADDY CROPS AND ITS ADOPTION LEVEL IN HARYANA

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ABSTRACT

Rotavetor technology is a widely used for tillage operation because of its superior ability to mix, pulverize and flatten soil. This technology is very helpful for reduce the land preparation cost and increase the yield. In the present study different factors affecting the adoption level of Rotavetor Technology in Paddy and Wheat Production in Haryana has been explained. Adoption level of the Rotavetor technology has also been checked in selected districts. The Present study was conducted in Haryana state. Top three Districts of Haryana which have maximum area covered under Wheat and Paddy crops have been selected. These are- Kaithal, Karnal and Sirsa District. Two blocks were selected from the each district on the basis of same criteria. 10 farmers who used Rotavetor technology for both Wheat and Paddy crops were taken as Adopter from each block. Same number of farmers who did not use this new technology have been taken as Non-Adopter from each block. Thus, a sample of 120 respondents have been selected for the study. The study has revealed various factors various factors like Age, Farm Experience, Education Level, Land Size, Nature of the Family, Source of credit, Occupation that influence the adoption of Rotavetor technology. The level of education of the farmers have been found a positive impact on the new technology adoption decision. Large farm size farmers adopt more new technology. It has been found that on an average adopters have 19.82 acre land size while it was on an average 7.83 acre land size of non adopter farmers. The study reported that farmers have started to use Rotavetor technology in Paddy and Wheat production from 2005. Adoption level has been increased in year 2008 and 2009.

KEY WORDS: Rotavetor Technology, Wheat and Paddy crops, Education, Land Size.

India is the second largest producer of wheat and rice. However, Indian agriculture still faces major challenges. India's population is growing faster than its ability to produce rice and wheat. On the other hand, agriculture's share in India's economy has progressively declined. So, there is strong need for accelerate growth in wheat and paddy production. Mechanization of agriculture has been helpful to increase the agricultural production, productivity, reduce the cost, save the time etc. A number of new technologies are coming up in the field of agriculture. Among these technologies, Rotavetor technology is crucial to build efficiencies in agriculture. In the present scenario, global climate change is one of the important issue in all over the world. Rotavetor technology efficiently plough all type of soil. After Harvesting the previous crop tillage can be prepared in short period for next crop by this technology. It destroy weeds, mix previous crop residues in soil which increase soil fertility. Rotavetor technology is also helpful to protect the environment because it is fuel saving technology. Rotavetor prepares the field in single operation, yet in conventional method of tillage farmers prepare the land in 2-3 operation. Rotavetor technology carries out all tillage operations like cultivator, disc, puddling in single operation. This technology enhance the soil physical properties which result in increased crop yield. Hence technology has lot of benefit, yet its adoption is not at large scale. So, this research paper has been attempted to described the various factors that influence the adoption of Rotavetor technology. Level of adoption has also been found through this study. Keeping this view in mind, the present study has been taken up following specific objectives:

1. Different Factors Affecting the Adoption level of Rotavetor Technology in Paddy and Wheat Production of Haryana.
2. Adoption level of Rotavetor technology in Paddy and Wheat production of Haryana.

Methodology:

Sampling Design:

The Present study was conducted in Haryana state which is at Second position in food grain production in the country. Wheat and paddy are two major crops of Haryana. Top three Districts of Haryana which have maximum area covered under Wheat and Paddy crops have been selected. These are- Kaithal, Karnal and Sirsa District. Two blocks were selected from the each district on the basis of same criteria. In Kaithal District, two blocks namely- Kaithal and Gulha were selected on the basis of maximum area covered under Wheat and paddy crops. From Sirsa District, two blocks named- Dabwali and Sirsa have been selected. From Karnal District, two block namely- Nissing and Assandh have been selected on same criteria. 10 farmers who used Rotavetor technology for both Wheat and Paddy crops were taken as Adopter from each block. Same number of farmers who did not use this new technology have been taken as Non-Adopter from each block. Thus, a sample of 120 respondents have been selected for the study to know the factor influence for adoption of Rotavetor technology. Adoption level has been checked from 60 adopters who use this technology.

Source of data:

The study was conducted through primary data collection during the years 2014-15. Interview schedule method has been used for the data collection.

Analytical techniques:

Simple Average, Percentage and Cumulative Frequency method have been used in study.

Results and Discussion:

First part of the study has been explained various factors that influence the adoption of Rotavetor technology. Comparison of Adopter and Non-Adopter has been made on the basis of factors and find out the factor which have high influence on the adoption of technology. Next part of the study showed the adoption level of Rotavetor technology for Wheat and Paddy production in Sirsa, Kaithal and Karnal Districts. Thus, results and discussion related to above mentioned topic was given as below:

Factors Influencing and Adoption Level of Selected Modern Technologies

Table-1: Factors Affecting the Adoption level of Rotavetor Technology in Wheat and Paddy Production of Haryana

Variables	Adopter	Non-Adopter
1. Age (in Average)	29.03	47.8
2. Farm Experience (in Average)	9.40	26.15
3. Education (in %)		
• Illiterate	0.00	18.33
• Primary	0.00	25.00
• Middle	5.00	28.33
• High	10.00	18.33
• Intermediate	36.67	8.33
• Graduate	36.67	1.67
• Post Graduate	11.67	0.00
4. Land Size (in Average)	19.82	7.83
5. Nature of Family (in %)		
• Nuclear	66.67	36.67
• Joint	33.33	63.33
6. Source of Credit (in %)		
• Only Cooperative Society	0.00	25.00
• Cooperative Society +Banks	66.67	10.00
• Cooperative Society +Banks+ Money Lender	33.33	18.33
• Only Money Lender	0.00	25.00
• Other	0.00	21.67
7. Occupation (in %)		
• Only Agriculture	78.33	95.00
• Agriculture plus Government	6.67	1.67
• Agriculture plus Private	5.00	1.67
• Agriculture plus Self Employment	10.00	1.67

(Source: Field Survey)

This table:1 shows the factors affecting the adoption level of Rotavetor Technology in Wheat and Paddy production of Haryana. Factors have been divided into seven categories which were: Age, Farm Experience, Education Level, Land Size, Nature of the Family, Source of credit, Occupation. Age factor was significantly associated with the adoption of Rotavetor technology. The study has been found that younger farmers were more willing to adopt the new technology. The study showed that on an average adopters have 29.03 years Age while non adopters have 47.8 years age. It has been found that younger farmers were more risk taker and willing to increased profits from adoption of Rotavetor technology. The level of education of the farmers have been found a positive impact on the new technology adoption decision. The study reveals that 18.33 per cent farmers were illiterate who did not adopt technology. On the other hand no farmer was recorded illiterate in case of adopter. 36.67 per cent adopters farmers had Intermediate as well as Graduate. 25 per cent non adopter farmers had attended primary education. Farming experience also effect the adoption level of technology. Farmers who were engaged in agriculture from a long time were less interested to adopt the new technology. Farm size had also great influenced on the adoption of technology. Large farm size farmers adopt more new technology. It has been found that on an average adopters have 19.82 acre land size while it was on an average 7.83 acre land size of non adopter farmers.

The study reveals that majority of adopter (66.67 per cent) were belonged to nuclear family. Non adopters farmers (63.33 per cent) had joint family. So, the study concluded that nuclear family more adopted new technology. Source of credit has been also recognized as one of the important factor that influence the adoption of technology. 25 per cent non adopters farmers reported that they got credit from cooperative society alone while adopter took credit not only from cooperative society but also from other sources. The study showed that 66.67 per cent adopters got credit from cooperative societies and banks. Non adopters farmers were more depend on Money lender as compared to adopters. The results of study shows that 25 per cent non adopter took credit form only Money lender. On the other hand 33.33 per cent adopter took credit from Cooperative society, Banks, and Money lender. So, the study concluded that the farmers who got credit from different source more likely to use this technology. The study have reported that farmers' occupation also effect the adoption level of technology. The results of the study showed that those farmers who only engaged in agriculture were less likely to adopt new technology while the farmer with double occupation like agriculture with government job, private job, or self employment were more interested to adopt new technology. The study found that 95 per cent non adopter engaged only in agriculture while 78.33 per cent adopters were engaged in only agriculture. Very few non adopter were done agriculture with other occupation. It was only 1.67 per cent non adopter who were engaged in agriculture and also in government jobs. Same per cent of non adopter have been found in agriculture plus private job and agriculture plus self employment. The study found that 10 per cent adopters were done agriculture with self employment occupation.

Table-2: Adoption level of Rotavetor technology in Paddy production of Haryana.

Year	Sirsa District	Kaithal District	Karnal District	Total	Cumulative Frequency	Percentage
Up to 2005	0	2	1	3	3	5
Up to 2006	1	2	3	6	9	15
Up to 2007	3	5	4	12	21	35
Up to 2008	5	5	6	16	37	62
Up to 2009	6	5	4	15	52	87
Up to 2010	5	1	2	8	60	100
Total	20	20	20	60	-	-

(Source: Field Survey)

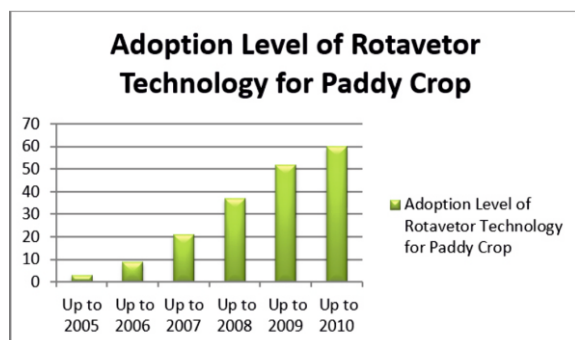


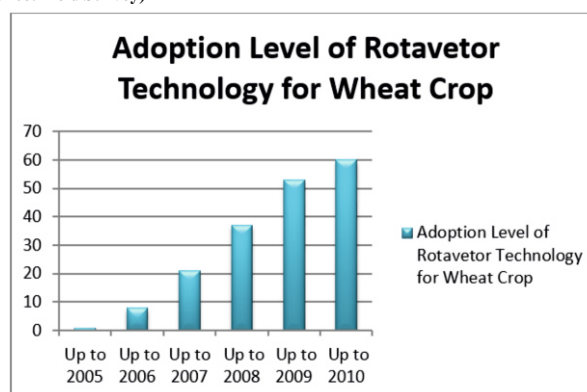
Table: 2 shows the adoption level of Rotavetor technology in Paddy production of Sirsa, Kaithal and Karnal District. Total 60 respondents were classified as adopters in the study. The study reported that farmers have started to use Rotavetor technology in Paddy production from 2005. Among all the 60 respondents, three farmers from Kaithal and Karnal districts has been firstly adopted Rotavetor technology for paddy crop. Adoption level of Rotavetor technology

has been increased during the year 2008 and 2009. Among all the respondents, last adoption of this technology has been highlighted through year 2010. Kaithal District has higher adoption level as compared to other two district.

Table-3: Adoption level of Rotavetor technology in Wheat production of Haryana.

Year	Sirsa District	Kaithal District	Karnal District	Total	Cumulative Frequency	Percentage
Up to 2005	0	1	0	1	1	1.67
Up to 2006	2	3	2	7	8	13.33
Up to 2007	3	4	6	13	21	35.00
Up to 2008	5	5	6	16	37	61.67
Up to 2009	7	5	4	16	53	88.33
Up to 2010	3	2	2	7	60	100.00
Total	20	20	20	60	-	-

(Source: Field Survey)



The table:3 shows that Rotavetor technology has been firstly adopted for wheat crop in the same year as it was in Paddy crop by the respondents. In 2007, total 13 respondents has been used this technology. Adoption level has been increased in year 2008 and 2009. Kaithal and Karnal district was ahead from Sirsa district in adoption level. Cumulative frequency showed that all the respondents have been adopted Rotavetor technology for Wheat crop up to 2010 year. Thus the overall results showed that adoption level of Rotavetor technology has been increased very rapidly among all the three district.

Conclusion:

The study has revealed various factors various factors that influence the adoption of Rotavetor technology for Wheat and Paddy crops. These were-Age, Farm Experience, Education Level, Land Size, Nature of the Family, Source of credit, Occupation. These all factor effect the adoption of technology. Age factor was significantly associated with the adoption of Rotavetor technology. The study has been found that younger farmers were more willing to adopt the new technology. Because younger farmers were more risk taker and willing to increased profits from adoption of Rotavetor technology. The study has found that 36.67 per cent adopters farmers had Intermediate as well as Graduate. So, the level of education of the farmers have been found a positive impact on the new technology adoption decision. Source of credit has been also recognized as one of the important factor that influence the adoption of technology. 25 per cent non adopters farmers reported that they took credit from cooperative society alone while adopter got credit not only from cooperative society but also from other sources. So, the study concluded that the farmers who got credit from different source more use this technology. The study reported that farmers have started to use Rotavetor technology in Paddy production from 2005. Adoption level of Rotavetor technology for Paddy crop has been increased during the year 2008 and 2009. It was noticed that in case of Wheat ,Kaithal and Karnal district was ahead from Sirsa district . Cumulative frequency showed that all the respondents have been adopted Rotavetor technology for Wheat crop up to 2010 year. Thus the overall results showed that adoption level of Rotavetor technology has been increased very rapidly for Wheat and Paddy crops among all the three district.

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